REMARKS/ARGUMENTS

Claims 1 – 18 are pending. By this amendment, claim 1 is amended and claims 2 and 18 are cancelled. In addition, the specification is amended to correct spelling errors. No new matter is introduced. Reconsideration and issuance of a notice of allowance is respectfully requested.

Entry of the amendment is proper under 37 C.F.R. § 1.116 because the amendments: 1) place the application in condition for allowance, and 2) do not raise any new issues requiring consideration by the Examiner.

On page 2 the Office Action rejects claims 1 and 18 under 35 U.S.C. § 103(a) over U.S. Patent 5,299,139 to Baisuck et al. (hereafter Baisuck) in view of U.S. Patent 6,230,299 to McSherry et al. (hereafter McSherry). On page 3 the Office Action rejects claims 2-9 under 35 U.S.C. § 103(a) over Baisuck in view of McSherry and further in view of U.S. Patent 6,321,369 to Heile et al. (hereafter Heile). These rejections are respectfully traversed.

Claims 2 and 18 are cancelled and hence the rejections of these claims are moot.

Claim 1 is amended by adding all the limitations of dependent claim 2, and claim 2 is cancelled. Claim 1, as amended, relates to a method for determining location of a short in a circuit. The method contains the steps of running a connectivity extract tool on an artwork of the circuit, determining whether a short exists in the circuit using a short locator tool, and comparing the artwork of the circuit to a schematic of the circuit. The short locator tool may create a copy of the artwork of the circuit and may infer labels to the copy.

Regarding the subject matter of claim 2, incorporated now into claim 1, the Office Action admits that Baisuck and McSherry "do not teach creating a copy of their artwork (layout) and inferring labels to that copy." However, the Office Action asserts that Heile "disclose an electronic design methodology that makes use of copying, deleting, renaming, adding, as well as other editing choices ... . The analysis tool includes a layout editor ... so that changes (like adding/deleting) labels can be made."

Applicant's invention as recited in amended claim 1 includes the step of "running a short locator tool, comprising

> examining a schematic of the circuit,
>
> creating a copy of the artwork of the circuit, and
>
> inferring labels to the copy of the artwork ... ."

As described in the specification at page 4, lines 3 – 6, the short locator tool determines, through examination of a text file, what the correct configuration of the circuit should be: "the tool knows that all SET ports are suppose [sic] to be connected to CK1 and

all GND ports are suppose [sic] to be connected to GND1." Based on this determination, the locator tool then infers labels for each connection in the circuit. For example, the locator tool infers the label CK1 For all SET labels.

The term "inferring" means "to derive as a conclusion from facts or premises." *See* Webster's New Collegiate Dictionary, © 1974, with pages attached hereto. This definition conforms to Applicant's use of "inferring" in amended claim 2.

Nowhere does Heile disclose of suggest the step of "inferring" labels to the copy of the artwork. The specific references to Heile provided in the Office Action with respect to the rejection of claim 2 (i.e., column 13, line 40, column 8, line 35, and column 7, line 36) have nothing to do with "inferring" labels. More particularly, Heile at column 13, line 40 discloses a menu having editing features "such as copy, delete, rename, or the like." None of these choices teach or suggest inferring. Furthermore, the disclosure of a menu implies human intervention to select and execute a function, whereas in the claimed invention, the step is executed by a short locator tool. At column 8, line 35, Heile discloses a layout editor. This reference to Heile does not disclose or suggest inferring. At column 7, line 36, Heile discloses that design file templates may be in any specified format. This reference to Heile also does not disclose or suggest inferring.

Furthermore, Applicant has diligently reviewed Heile in its entirety, and there is not one hint of a suggestion to "inferring labels to the copy of the artwork" as recited in amended claim 1. As the Office Action admits, Baisuck and McSherry do nothing to correct this deficiency. Because Baisuck, McSherry, and Heile, individually and in combination do not disclose or suggest inferring labels to the copy of the artwork, claim 1 is patentable.

Furthermore, Baisuck describes a short-circuit locator method by segregating the area of the electrical node into a plurality of individual polygons. The polygons that represent improper connections are then identified and the short-circuit located.

McSherry describes a data extraction tool to extract filtered connectivity and geometrical data of an integrated circuit (IC) design. The connectivity and geometrical data for each layout cell hierarchy are extracted at least in part in accordance with specified parasitic effect windows.

Heile describes a method to generate a base design output file in the form of one or more data files including assignment data. A variation design can also be created by adding additional assignments to the assignment data.

As admitted by the Office Action, Baisuck does not teach running a connectivity extract tool on the artwork, nor does Baisuck teach comparing the artwork of the circuit to the

schematic. Baisuck segregates the area of an electrical node into a plurality of polygons and locates the problem by analyzing contiguous polygons between known reference points. Baisuck locates the short-circuit by tracing the node/polygons multiple times and combining the result of all tracings to identify the problem. Baisuck's operation does not need extraction or copying. Indeed, there are no benefits to performing extraction and copying of the artwork in Baisuck. Accordingly, Applicant respectfully submits that there is no motivation or desirability to extract the connectivity and geometrical data, making a copy of the artwork and inferring labels to the copy of art work. In fact, Basiuck motivates against such a modification and, therefore, one or ordinary skill in the art would not have been motivated to select and combine Basiuck with McSherry and Heile to render the claimed invention obvious.

Claims 3 – 9 depend from patentable claim 1, and for this reason and the additional features they recite, claims 3 – 9 are also patentable.

Withdrawal of the rejection of claims 1 and 3 – 9 under 35 U.S.C. § 103(a) is respectfully requested.

On page 4 the Office Action rejects claims 10-17 under 35 U.S.C. § 103(a) over U.S. Patent 6,275,974 to Bartels et al. (hereafter Bartels) in view of Heile. This rejection is respectfully traversed.

Similar to claim 1, claim 10 recites the step of "inferring labels to the copy of the artwork." As noted above, Heile does not disclose or suggest this feature, and Bartels does nothing to correct this deficiency. Thus Bartels and Heile, individually and in combination, do not disclose or suggest all the elements of claim 10, and claim 10 is patentable.

Furthermore, Bartels describes a method for tracing a short in a VLSI circuit. The Bartels method does not require a special representation of the design, but only the capability to find all VLSI design component instances intersecting one particular design component instance (column 2, lines 20-23). Bartels avoids the requirements of extreme storage space and computation time by pruning the shortest path trees with a Breadth First Search (BFS) algorithm so that only the minimum of flat information is stored. In fact, Bartels specifically distinguishes its method by stating that "...the hierarchical structure of the design; i.e., components of the design (e.g., an adder or multiplexer), which are used multiple times, are not copied; only a 'transform' (an information about what sub-circuit is placed at which coordinates) is maintained." (column 3, lines 27-31). As such, Bartels teaches away from examining a schematic of the circuit, creating a copy of the artwork of the circuit, and inferring labels to the copy of the artwork, as in claim 10.

Accordingly, Applicant respectfully submits that Bartels does not suggest the desirability and thus the obviousness of making the combination. Rather, Bartels motivates against the combination. Consequently, Bartels and Heile cannot be combined to produce the invention recited in claim 10.

Claims 11 – 17 depend from patentable claim 10, and for this reason and the additional features they recite, claims 11 – 17 are also patentable. Withdrawal of the rejection of claims 10 – 17 under 35 U.S.C. § 103(a) is respectfully requested.

CONCLUSION

In view of the foregoing remarks, favorable reconsideration of all pending claims is requested. Applicant respectfully submits that this application is in condition for allowance and requests that a notice of allowance be issued.

Should the Examiner believe that anything further is required to expedite the prosecution of this application or further clarify the issues, the Examiner is requested to contact Applicant's attorney at the telephone number listed below.

Respectfully submitted,

Dated: **September 9, 2003**

John K. Harrop
Registration No. 41,817
Andrews & Kurth L.L.P.
Suite 300
1701 Pennsylvania Avenue, N.W.
Washington, D.C. 20006
Telephone: (202) 662-2700
Fax: (202) 662-2739

Attachment: Webster ©'s definition for "inferring"